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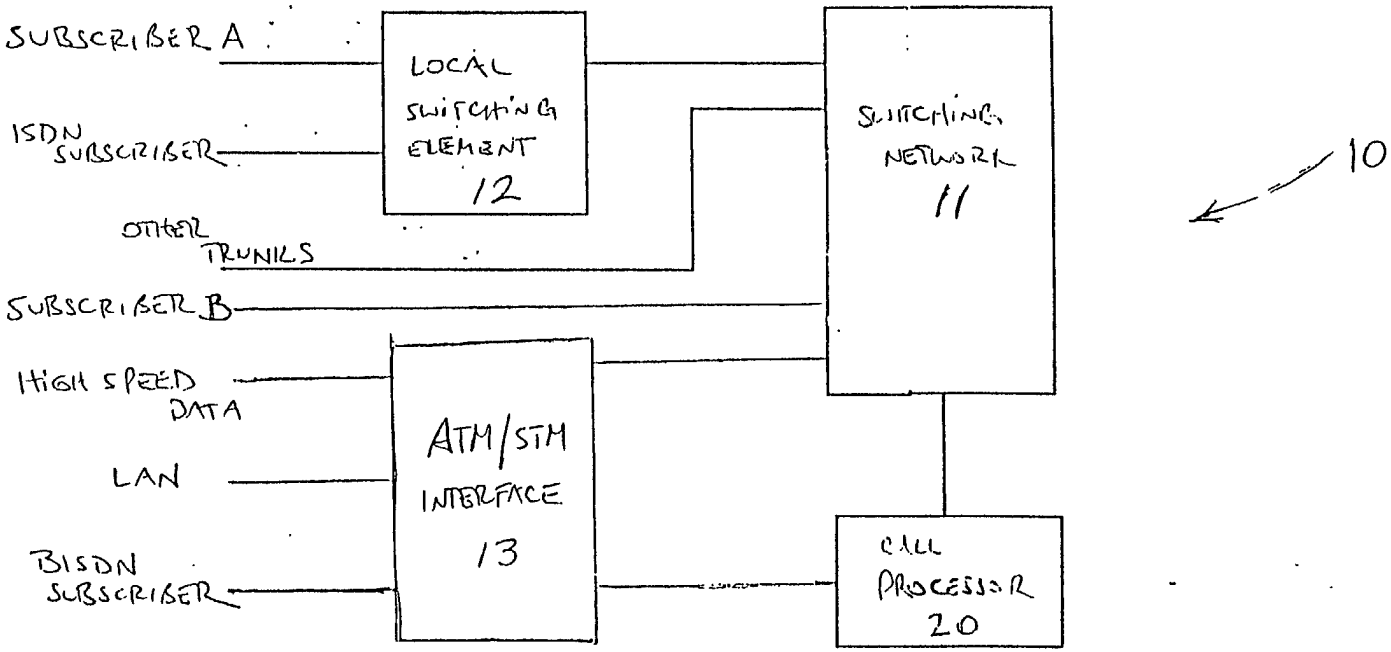

FIG. 1

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08/28/01

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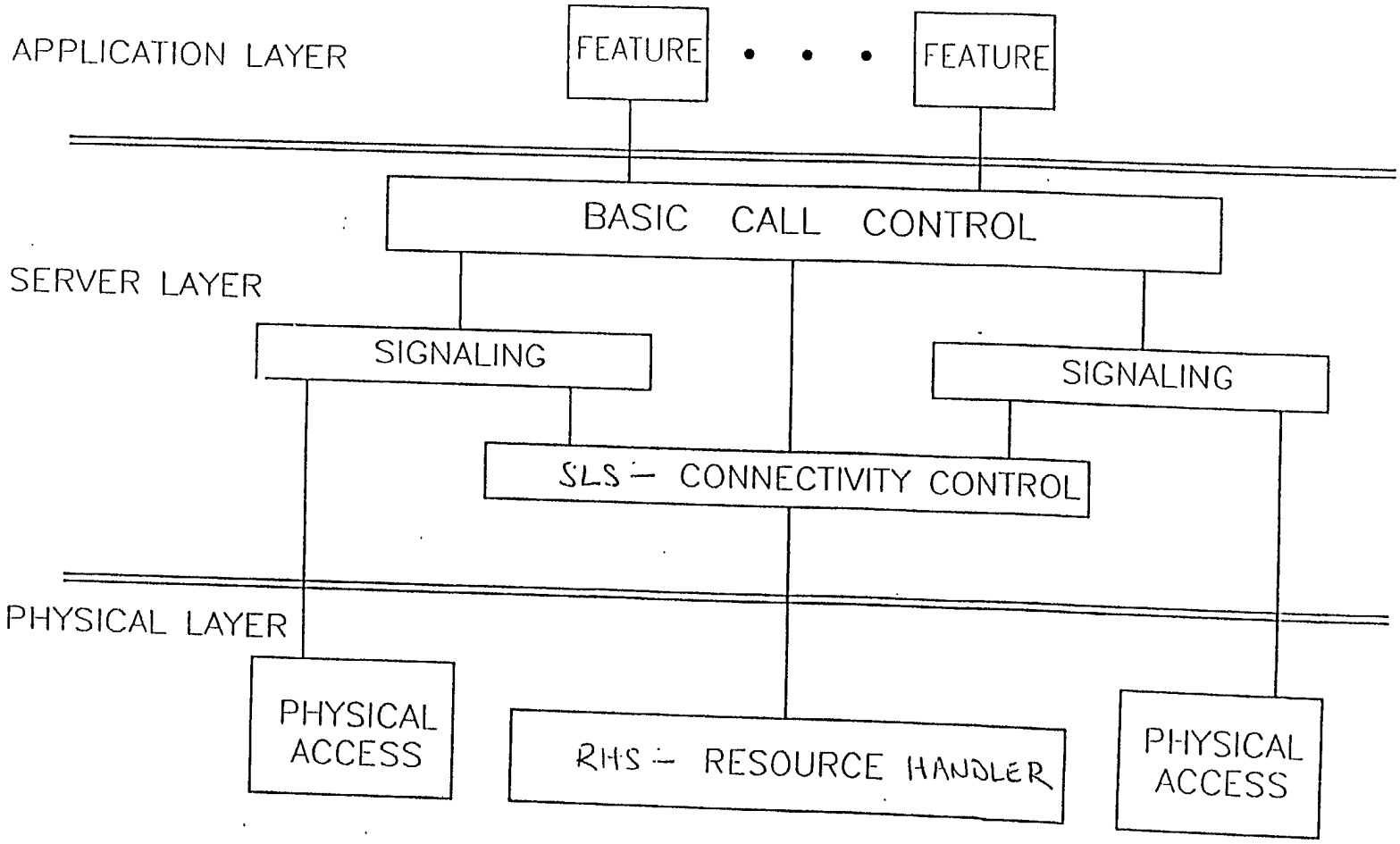

FIG 2a

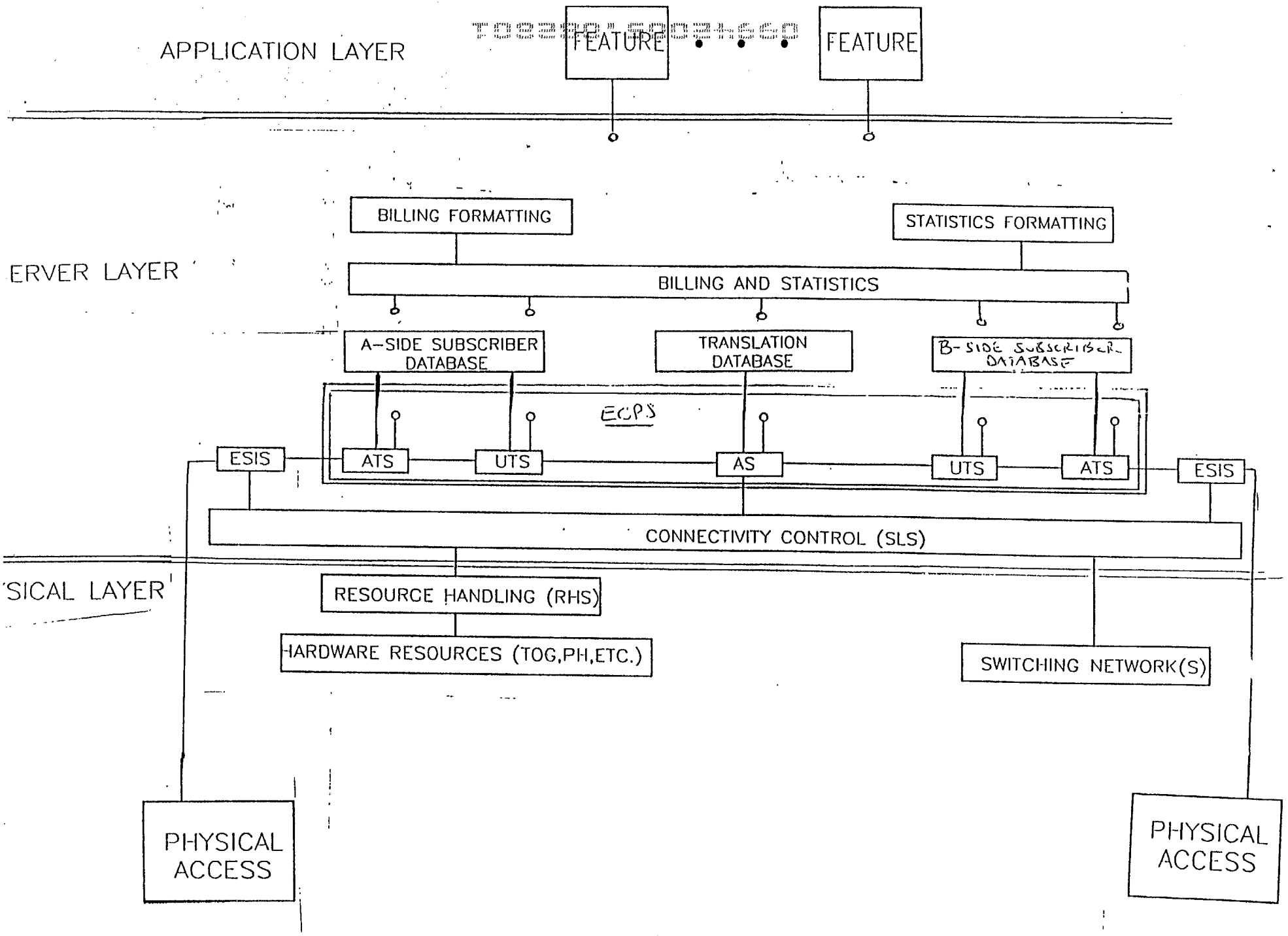
APPLICATION LAYER
FEATURE
FEATURE
ERVER LAYER
BILLING FORMATTING
STATISTICS FORMATTING
BILLING AND STATISTICS
A-SIDE SUBSCRIBER DATABASE
TRANSLATION DATABASE
B-SIDE SUBSCRIBER DATABASE
ECPS
ESIS
ATS
UTS
AS
UTS
ATS
ESIS
CONNECTIVITY CONTROL (SLS)
SICAL LAYER
RESOURCE HANDLING (RHS)
HARDWARE RESOURCES (TOG,PH,ETC.)
SWITCHING NETWORK(S)
PHYSICAL ACCESS
PHYSICAL ACCESS

FIG. 2b

Telecom Canada

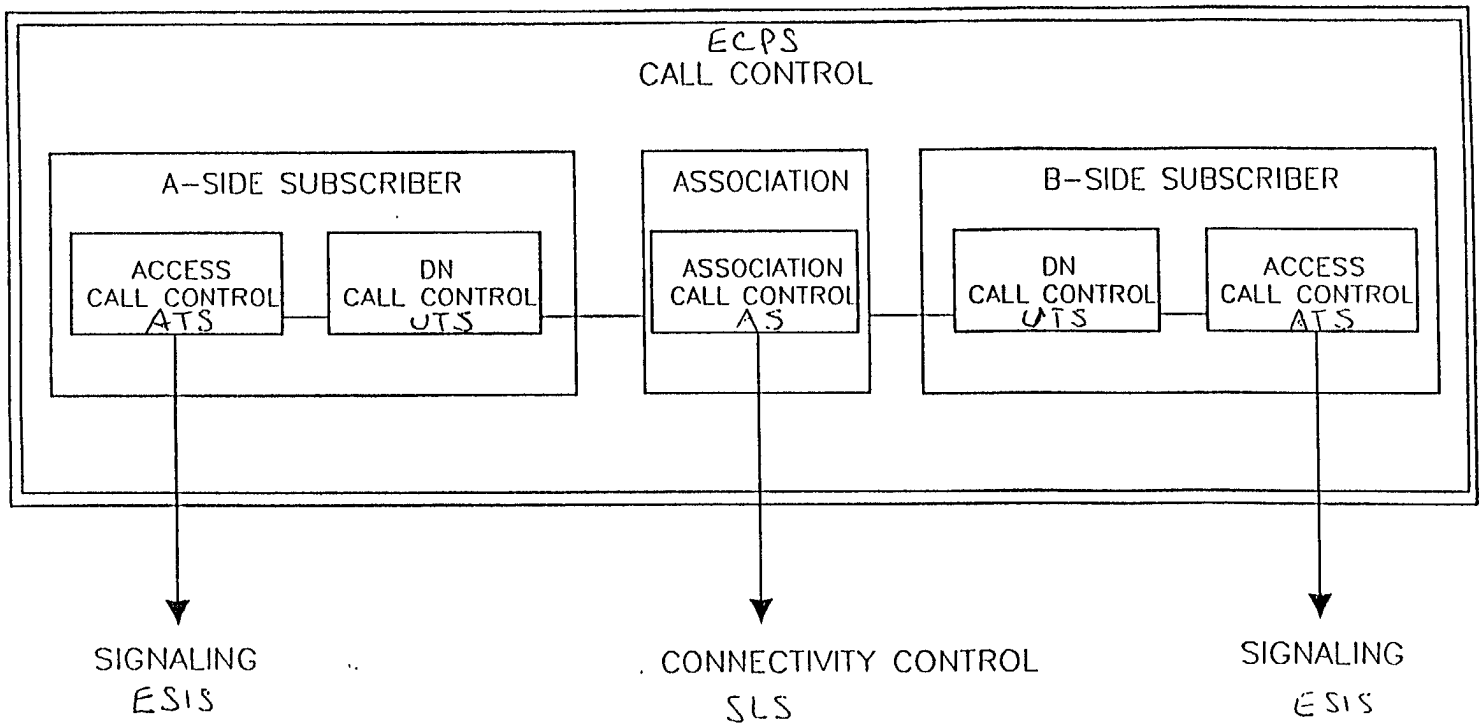

FIG. 2c

PROPERTY OF SPRINT

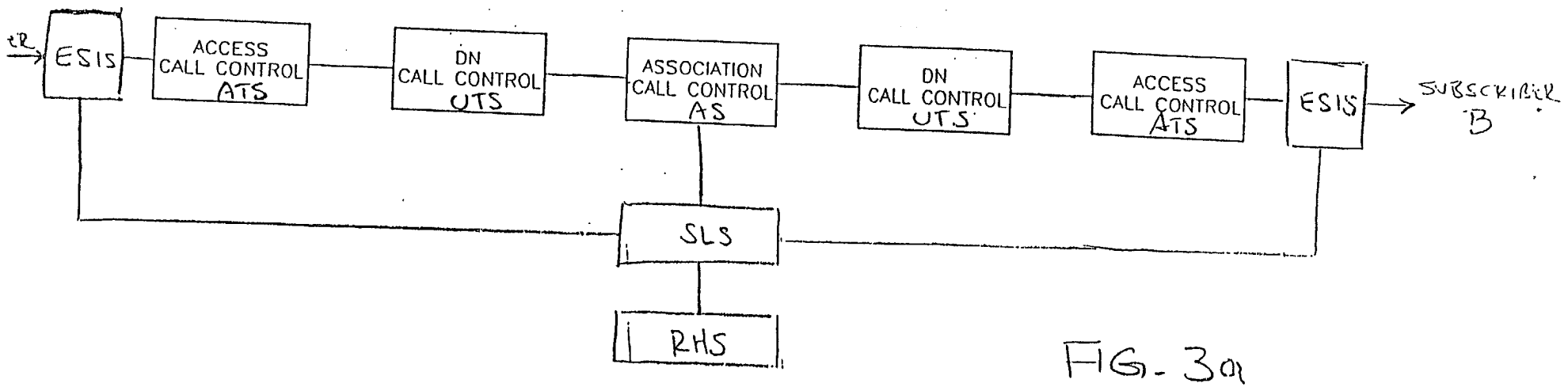

FIG. 3a

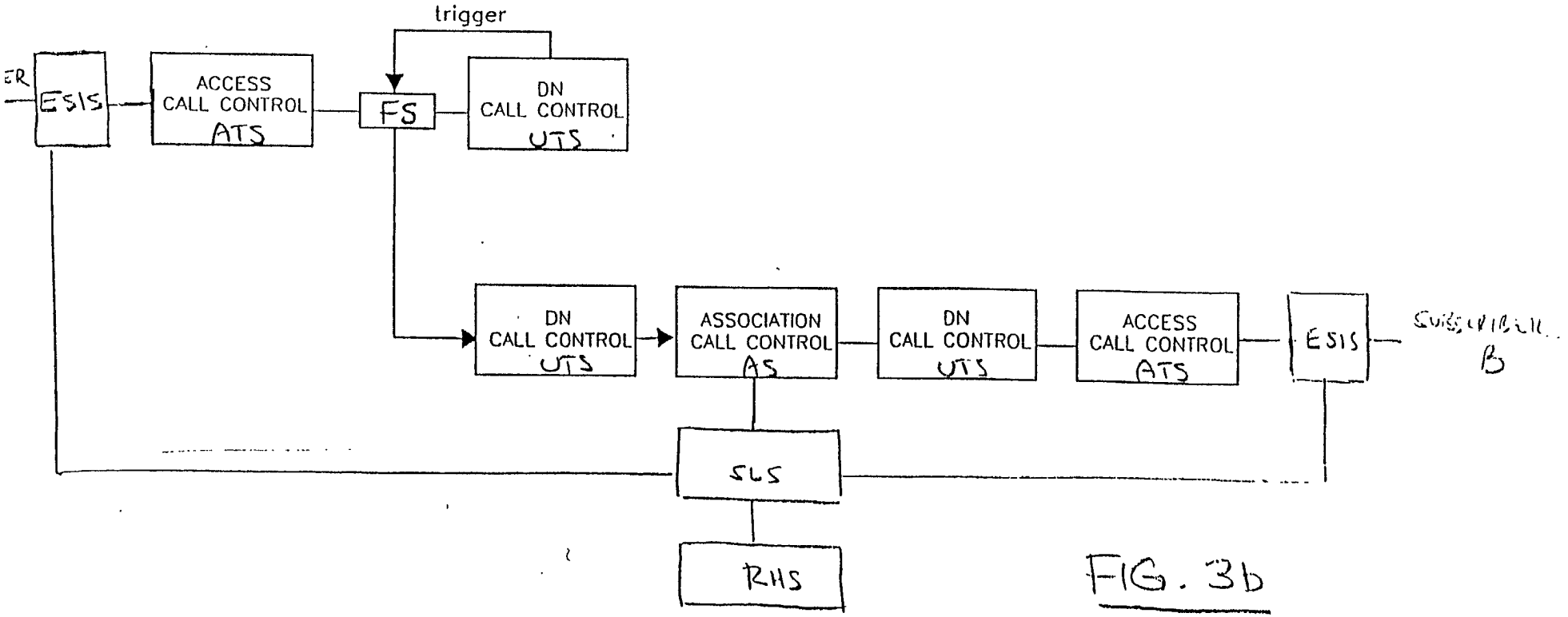

FIG. 3b

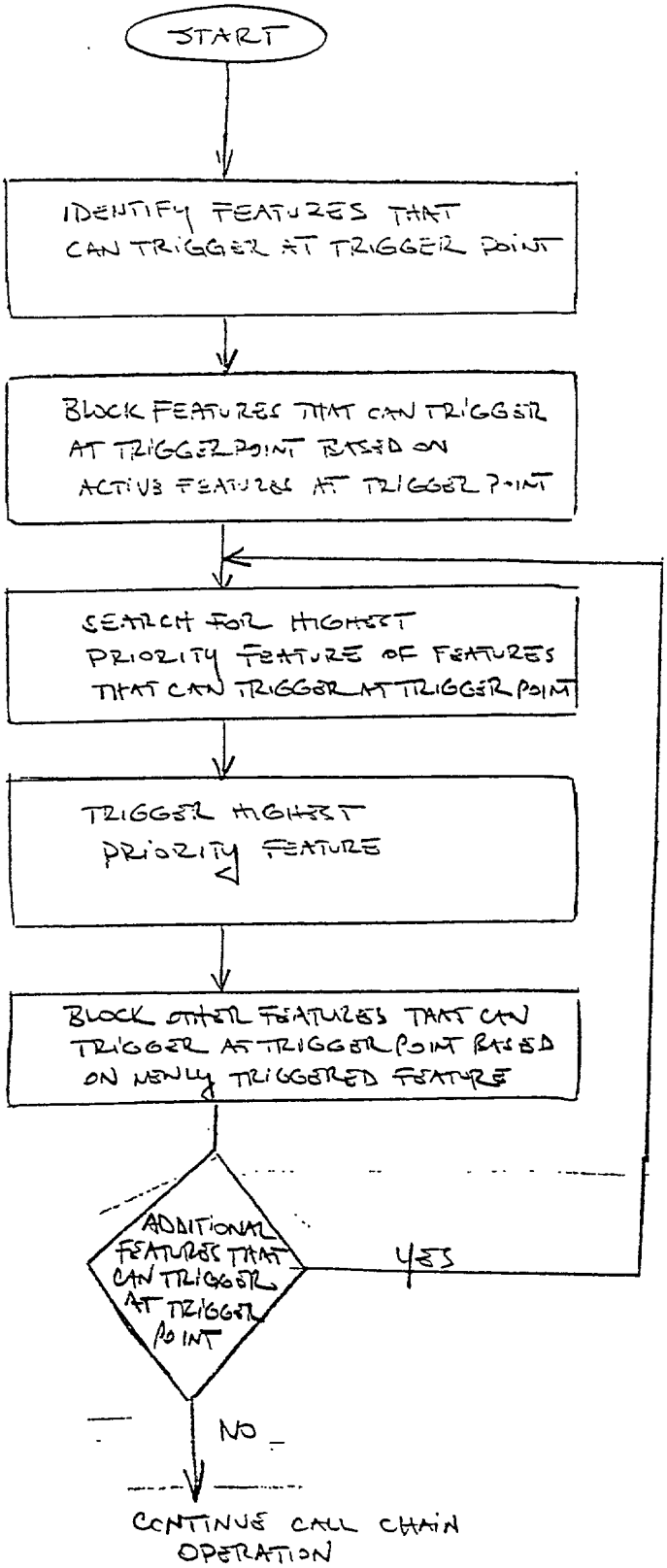
START
IDENTIFY FEATURES THAT CAN TRIGGER AT TRIGGER POINT
BLOCK FEATURES THAT CAN TRIGGER AT TRIGGER POINT BASED ON ACTIVE FEATURES AT TRIGGER POINT
SEARCH FOR HIGHEST PRIORITY FEATURE OF FEATURES THAT CAN TRIGGER AT TRIGGER POINT
TRIGGER HIGHEST PRIORITY FEATURE
BLOCK OTHER FEATURES THAT CAN TRIGGER AT TRIGGER POINT BASED ON NEWLY TRIGGERED FEATURE
ADDITIONAL FEATURES THAT CAN TRIGGER AT TRIGGER POINT
YES
NO
CONTINUE CALL CHAIN OPERATION

FIG. 4

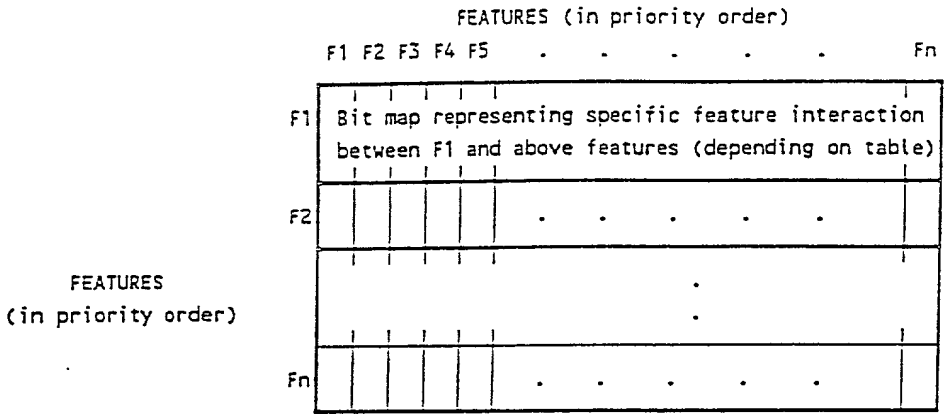

FIG. 5

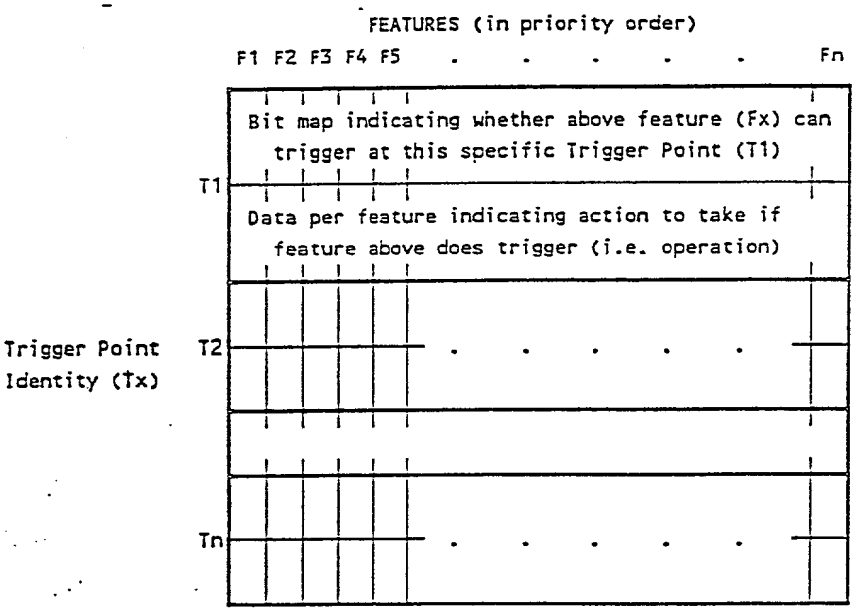

FIG. 6

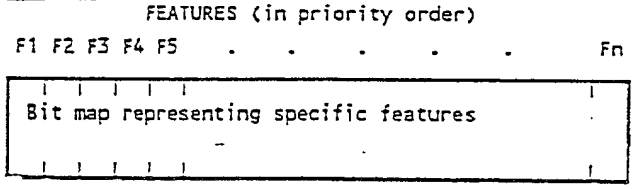

FIG. 7

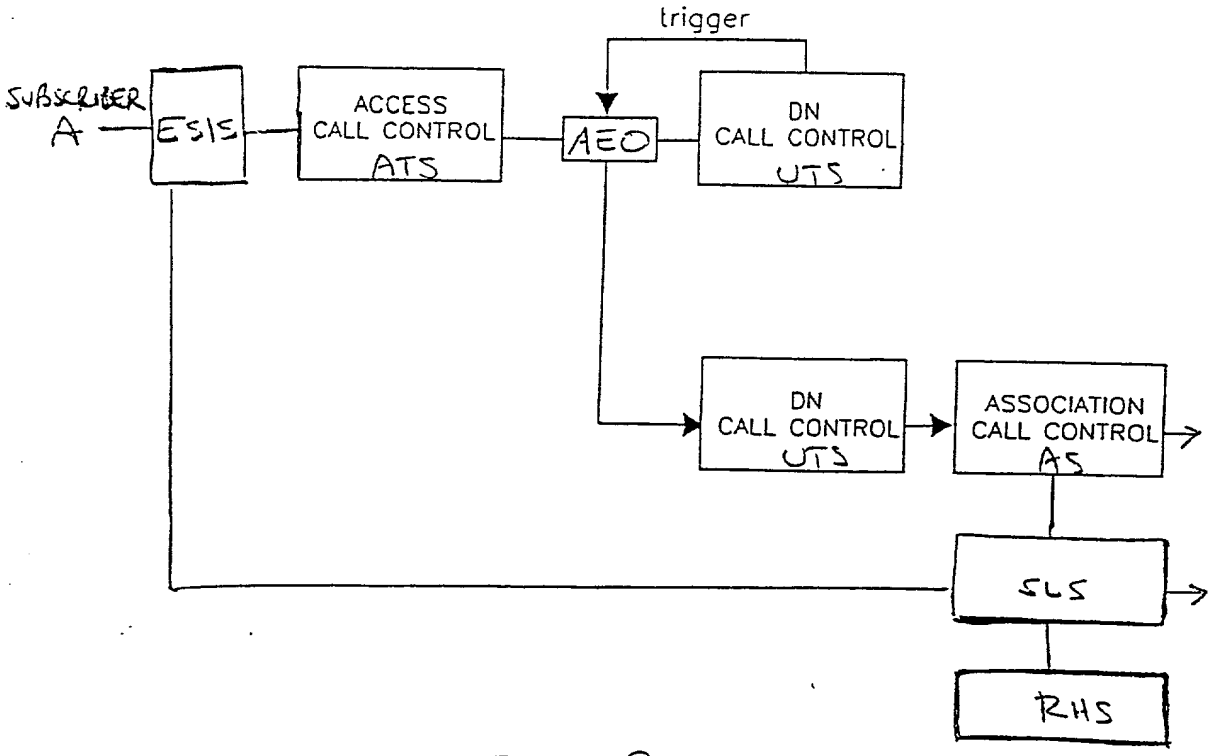
trigger
SUBSCRIBER A
ESIS
ACCESS CALL CONTROL ATS
AEO
DN CALL CONTROL UTS
DN CALL CONTROL UTS
ASSOCIATION CALL CONTROL AS
SLS
RHS

FIG. 8a

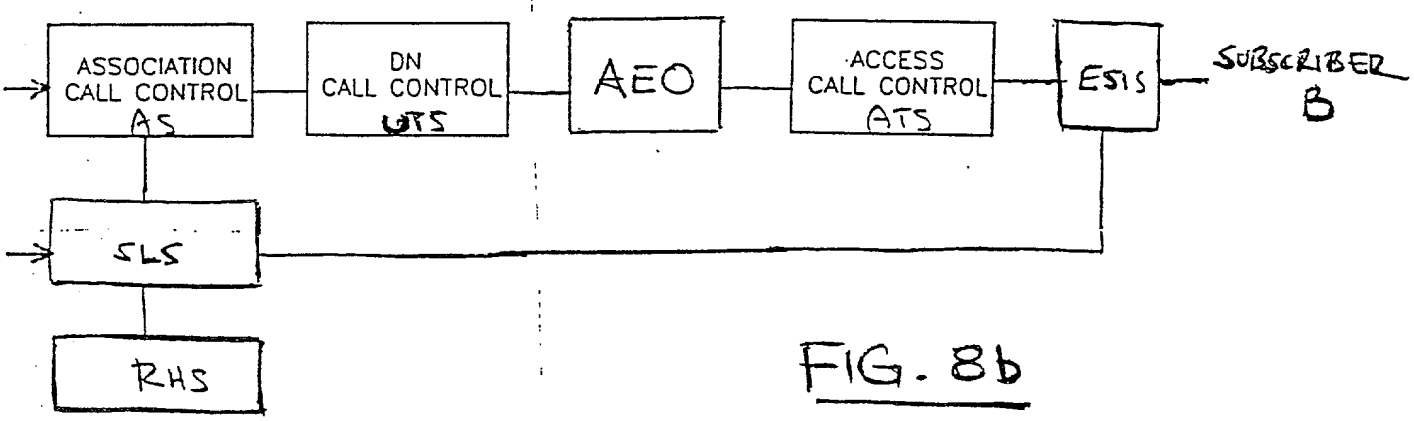
ASSOCIATION CALL CONTROL AS
DN CALL CONTROL UTS
AEO
ACCESS CALL CONTROL ATS
ESIS
SUBSCRIBER B
SLS
RHS

FIG. 8b

INITIAL CONDITION: A-party is busy with a call and subscribes to DND, CF, and CW. An operator activates AEO and calls the A-party (i.e. AEO has set a persistent trigger condition at the "SUBSCRIBER BUSY" trigger point).

TRIGGER POINT: SUBSCRIBER BUSY (A-party)

STEP (1) Determine features which could trigger at this trigger point based on Trigger Point Table, subscribed features, requested features and persistent features.

SUBSCRIBER BUSY TRIGGER POINT ROW	N Y Y Y
AND	
SUBSCRIBER FEATURE BITMAP	N Y Y Y
OR	
PERSISTENT FEATURE BITMAP	Y N N N
RESULT	Y Y Y Y

FIG. 8c

STEP (2) Block features based on active features.

The RESULT above remains unchanged since there are no active features on the called line.

FIG. 8d

STEP (3a) DO WHILE there are features to trigger

SEARCH (RESULT bit map) = AEO (AEO is most significant bit set to Y)

STEP (3b) Trigger highest priority feature (based on Trigger Point Table lookup)

Based on trigger point table entry for the AEO, feature operation 1 is performed; AEO software is triggered which controls termination to the A-party.

STEP (3c) Block features based on newly triggered feature

OLD RESULT	Y Y Y Y
	AND
AEO TRIGGERED FEATURE BLOCKING ROW	N N N N
NEW RESULT	N N N N

At this point the NEW RESULT bit map is empty indicating no further feature triggers are required.

FIG. 8e

FEATURE PRIORITY LIST (1 being highest priority)

1 Attendant Emergency Override (AEO)
2 Do Not Disturd (DND)
3 Call Forwarding (CF)
4 Call Waiting (CW)

FIG. 8f

SUBSCRIBER FEATURE BITMAP

AEO	DND	CF	CW
N	Y	Y	Y

FIG. 8g

TRIGGERED FEATURE BLOCKING TABLE

	AEO	DND	CF	CW
AEO	N	N	N	N
DND	Y	N	N	N
CF	Y	Y	N	N
CW	Y	Y	Y	N

'N' implies feature is blocked

FIG. 8h

TRIGGER POINT TABLE

	AEO	DND	CF	CW
TRIGGER PT SUBSCRIBER BUSY	N	Y	Y	Y
	SUPPORTING DATA AEO: action=1 DND: action=1 CF: action=1 CW: action=1			

action 1 = Trigger Related Feature

FIG. 8i

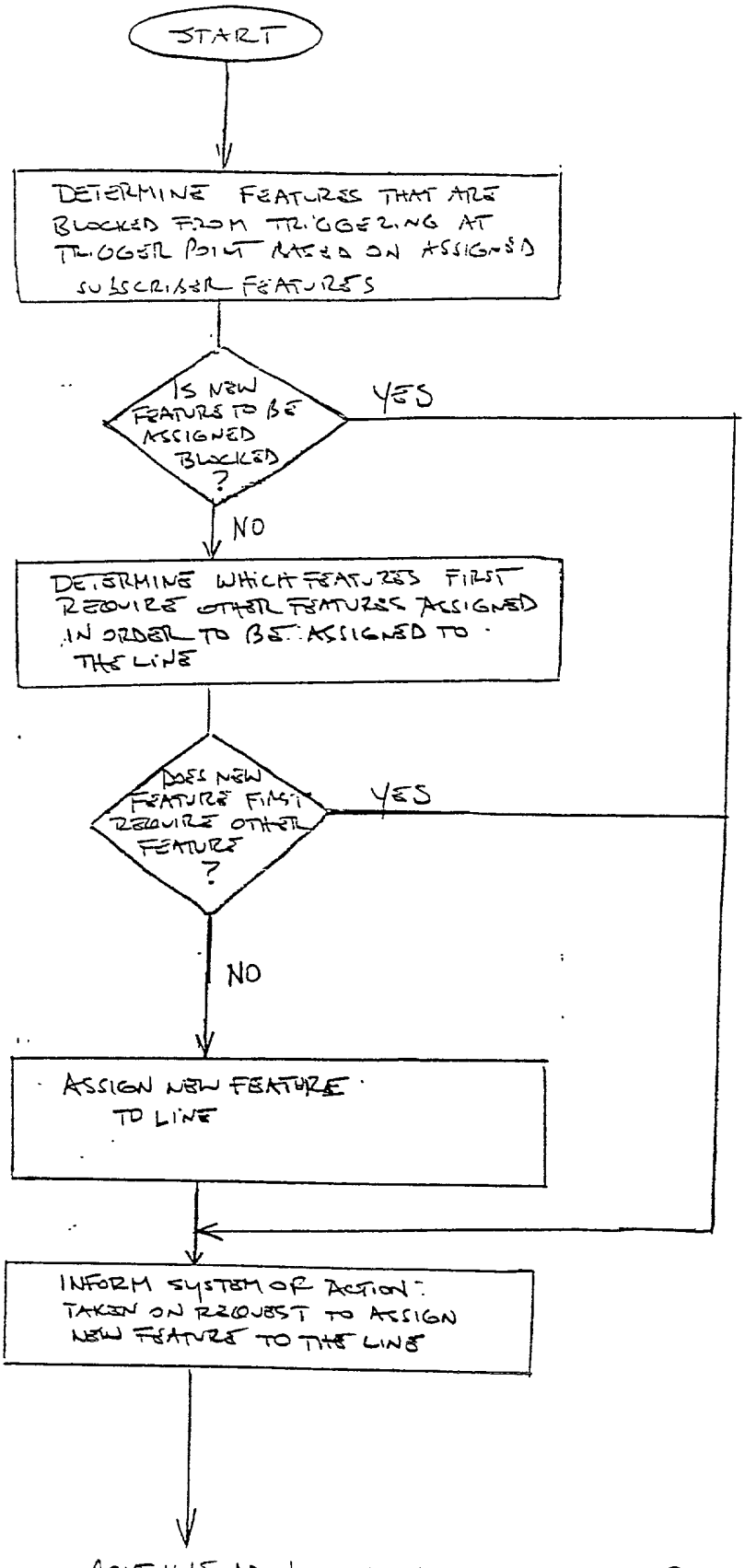
START
DETERMINE FEATURES THAT ARE BLOCKED FROM TRIGGERING AT TRIGGER POINT BASED ON ASSIGNED SUBSCRIBER FEATURES
IS NEW FEATURE TO BE ASSIGNED BLOCKED ?
YES
NO
DETERMINE WHICH FEATURES FIRST REQUIRE OTHER FEATURES ASSIGNED IN ORDER TO BE ASSIGNED TO THE LINE
DOES NEW FEATURE FIRST REQUIRE OTHER FEATURE ?
YES
NO
ASSIGN NEW FEATURE TO LINE
INFORM SYSTEM OF ACTION TAKEN ON REQUEST TO ASSIGN NEW FEATURE TO THE LINE
CONTINUE ADMINISTRATION OPERATION

FIG. 9

FEATURE PRIORITY (1 BEING HIGH PRIORITY)	FEATURE
1	MANUAL LINE (HOTLINE)
2	VOICE DATA PROTECTION (VDP)
3	ATTENDANT EMERGENCY OVERRIDE (AEO)
4	DENIED TERMINATION (DT)
5	DO NOT DISTRUB (DND)
6	NOT MAKE BUSY KEY (NMBK)
7	CALL FORWARD INHIBIT MAKE BUSY (CFIMB)
8	MAKE BUSY KEY (MBK)
9	CALL FORWARD INHIBIT LINE BUSY (CFILB)
10	DIAL CALL WAITING (DCW)
11	SELECTIVE CALL FORWARD (SCF)
12	CALL FORWARD VARIABLE (CFV)

FIG. 10a

Features (in priority order)

	1	2	3	4	5	6	7	8	9	10	11	12
FEATURE POSSIBLE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

FIG. 10b

Features (in priority order)

	1	2	3	4	5	6	7	8	9	10	11	12
SUBSCRIBER FEATURE	N	N	N	N	N	N	N	N	N	N	N	Y

FIG. 10c

Features (in priority order)

	1	2	3	4	5	6	7	8	9	10	11	12
1 HOTLINE												
2 VDP												
3 AEO												
4 DT												
5 DND												
6 NMBK												
7 CFIMB	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y
8 MBK	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9 CFILB												
10 DCW												
11 SCF												
12 CFV	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y

FIG. 10d

Feature Possible (initial condition)	=	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
									AND									
CFV Admin Blck Tble entry	=	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
RESULT (Feat Possible	=	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

FIG. 10e

	Features (in priority order)											
	1	2	3	4	5	6	7	8	9	10	11	12
1 HOTLINE												
2 VDP												
3 AEO												
4 DT												
5 DND												
6 NMBK												
7 CFIMB	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N
8 MBK	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9 CFILB												
10 DCW												
11 SCF												
12 CFV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

FIG. 10f

CFIMB Mutually Inc Tble Entry = Y Y Y Y Y Y Y N Y Y Y N Y Y Y Y Y Y

AND

Subscriber Feature = N N N N N N N N N N N Y N N N N N N

XOR

CFIMB Mutually Inc Tble Entry = Y Y Y Y Y Y Y N Y Y Y N Y Y Y Y Y Y

RESULT = N N N N N N N Y N N N N N N N N N N

FIG. 10g